Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently amended) A pharmaceutical composition comprising a gastrin compound according to claim 2 having an extended activity upon administration to a subject in comparison with native gastrin, and a pharmaceutically acceptable carrier.

2. (Original) A gastrin compound comprising: $Z\text{-}Y_m\text{-}X_n\text{-}AA_1\text{-}AA_2\text{-}AA_3\text{-}AA_4\text{-}AA_5\text{-}AA_6$, wherein AA_1 is Tyr or Phe, AA_2 is Gly, Ala, or Ser, AA_3 is Trp, Val, or Ile, AA_4 is Met or Leu, AA_5 is Asp or Glu, and AA_6 is Phe or Tyr the AA_6 being amidated; wherein Z is a polymer which when the polymer is a protein, Z is the amino acid sequence of the protein; Y_m is an optional spacer region comprising m amino acid residues of a small neutral amino acid, and X is selected from any consecutive portions of: residues 1-28 of SEQ ID NO: 1, residues 1-28 of SEQ ID NO: 2, residues 1-11 of SEQ ID NO: 3, and residues 1-11 of SEQ ID NO: 4, providing that the gastrin compound binds a gastrin/CCK receptor.

3. (Currently amended) The gastrin compound according to claim 2, wherein $AA_1\text{-}AA_2\text{-}AA_3\text{-}AA_4\text{-}AA_5\text{-}AA_6$ is Tyr-Gly-Trp-Met-Asp-Phe or Tyr-Gly-Trp-Leu-Asp-Phe.

Claim 4 (Canceled)

5. (Currently Amended) The gastrin compound according to claim 2, wherein Z is a protein or human serum albumin.

Claim 6 (Canceled)

7. (Original) The gastrin compound according to claim 2, wherein Y is a sequence comprising m residues having glycine alternating with alanine or having a random sequence of glycine and alanine.

8. (Original) The gastrin compound according to claim 2, wherein X is selected from the group of sequences: position 1 to position 11 of SEQ ID NO: 3; position 1 to position 11 of SEQ ID NO: 4; position 2 to position 11 of SEQ ID NO: 3; and position 2 to position 11 of SEQ ID NO: 4.

9. (Original) The gastrin compound according to claim 2, further comprising a cysteine residue at the amino terminus of Y when m is greater than 1, or at the amino terminus of X when m is 0.

10. (Original) The gastrin compound according to claim 2, wherein m is 0 to about 20 residues.

11. (Original) The gastrin compound according to claim 2, wherein X_n-AA_1-AA_2-AA_3-AA_4-AA_5-AA_6 further comprises a bifunctional cross-linking agent for linkage to Z if m is 0.

Claims 12-17 (Canceled)

18. (Original) The gastrin compound according to claim 1 wherein the gastrin component contains at least amino acids selected from the group of: positions 29-34 of SEQ ID NO:1; positions 29-34 of SEQ ID NO:2; positions 12-17 of SEQ ID NO: 3; and positions 12-17 of SEQ ID NO: 4, and the gastrin is further associated with a protein, a polymer, a lipid or a carbohydrate.

Claims 19-20 (Canceled)

21. (Original) The gastrin compound according to claim 18, wherein the protein is a serum albumin.

Claim 22 (Canceled)

23. (Original) A gastrin compound comprising a structure C-Y_m-X, wherein C is Cys or Lys, Y_m is an optional spacer region comprising m amino acid residues of a small neutral amino acid, and X is at least six amino acid residues comprising sequences selected from at least positions 12-17 of gastrin-17 (SEQ ID NO: 3 and 4) and at least positions 29-34 of gastrin-34 (SEQ ID NO: 1 and 2).

Claims 24-26 (Canceled)

27. (Original) The gastrin compound according to claim 23, further comprising a bifunctional cross-linking agent wherein a first reactive end of the cross-linking agent is covalently linked to C.

28. (Original) The gastrin compound according to claim 23, wherein a second reactive end of the cross-linking agent is covalently linked to a polymer or protein.

Claims 29-36 (Canceled)

37. (Currently amended) A method of treating a subject having diabetes, comprising administering a gastrin compound according to ~~any of~~ claims ~~1,~~ 2 ~~and 23~~

Claims 38-41 (Canceled)

42. (Currently Amended) A method of making a gastrin compound comprising associating an amino acid sequence of a gastrin with a carrier composition, wherein prior to associating the gastrin with the carrier, the gastrin is modified to comprise a cysteine substitution or an additional cysteine residue.

Claim 43 (Canceled)

44. (Currently amended) The method according to claim ~~43~~ 42, wherein the cysteine substitution is a replacement of pyroglutamate.

45. (Original) The method according to claim 42, wherein the gastrin amino acid sequence comprises at least positions selected from the group of: residues 29-34 of amino acid sequence SEQ ID NO: 1; residues 29-34 of amino acid sequence SEQ ID NO: 2; residues 12-17 of amino acid sequence SEQ ID NO: 3; and residues 12-17 of amino acid sequence SEQ ID NO: 4.

Claims 46-47 (Canceled)

48. (Currently amended)A method of treating a diabetes patient comprising administering to the patient a modified gastrin capable of covalently reacting with a serum protein, wherein the modified gastrin comprises a sequence of a native gastrin capable of binding to the gastrin/CCK receptor and an amino terminal cysteine or lysine.

Claims 49-50 (Canceled)

51. (Currently amended) A method for maintaining for an extended period of time an increased gastrin serum level compared with the serum level of a peptide having an amino acid sequence of a gastrin, the method comprising administering a gastrin compound according to ~~any of~~ claim ~~1,~~ 2 ~~and 23~~.

Claims 52-53 (Canceled)